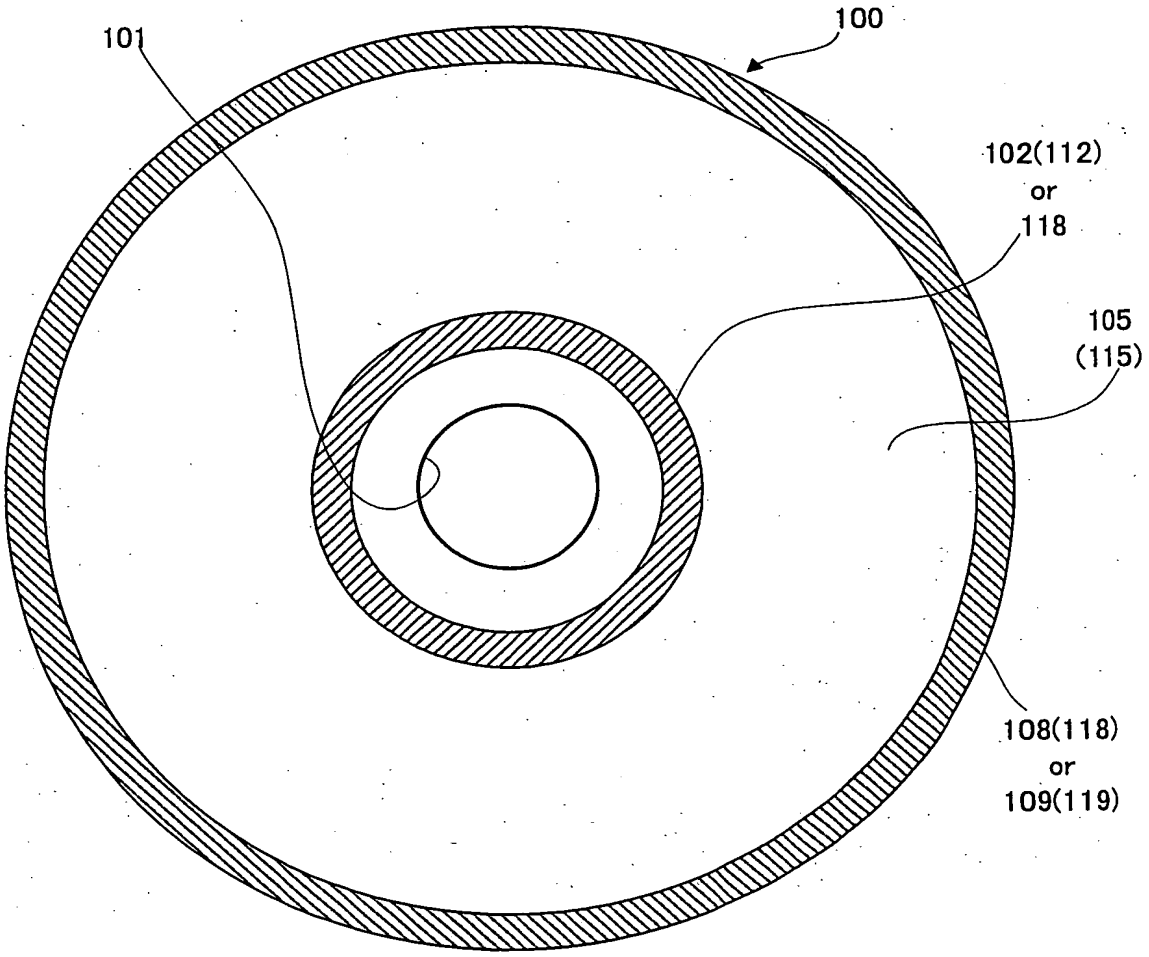
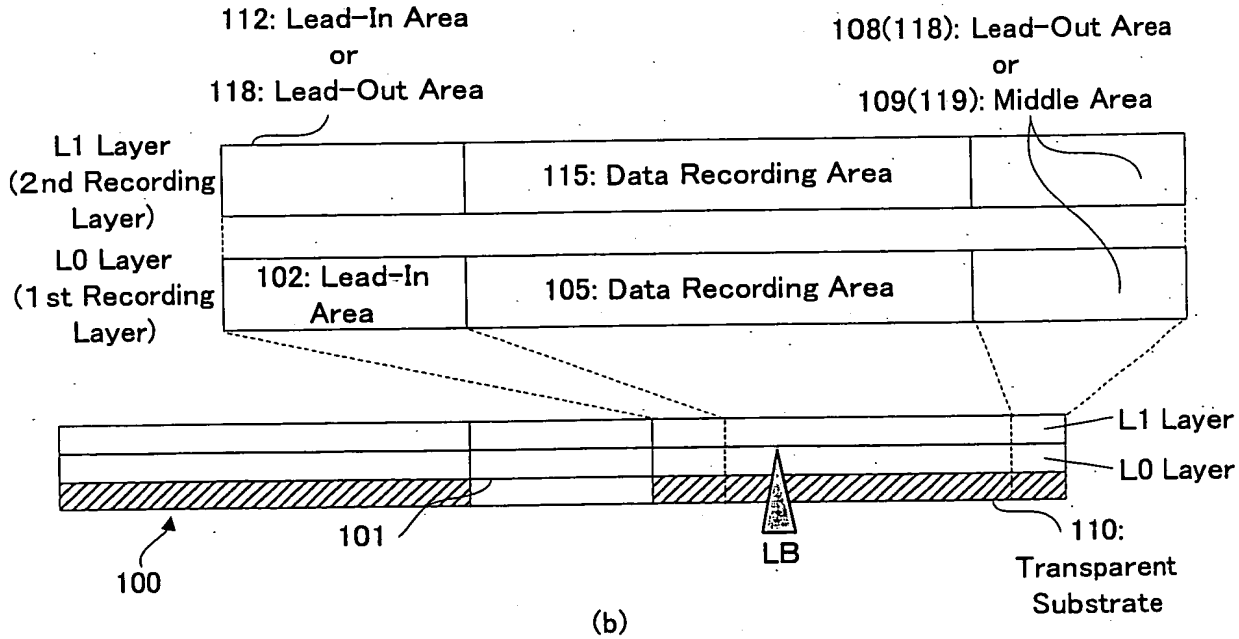
[FIG. 1]

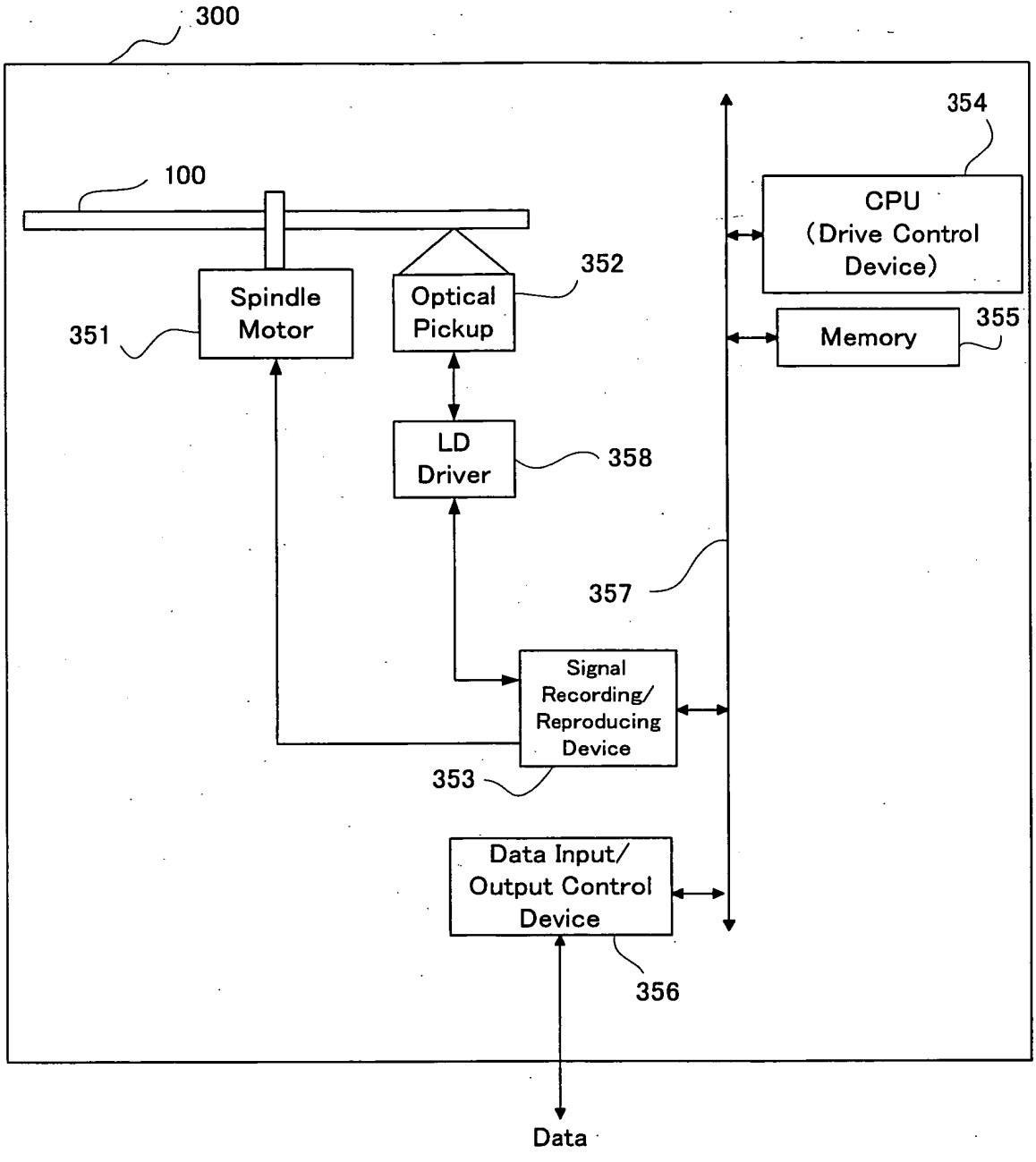

100
101
102(112)
or
118
105
(115)
108(118)
or
109(119)

(a)

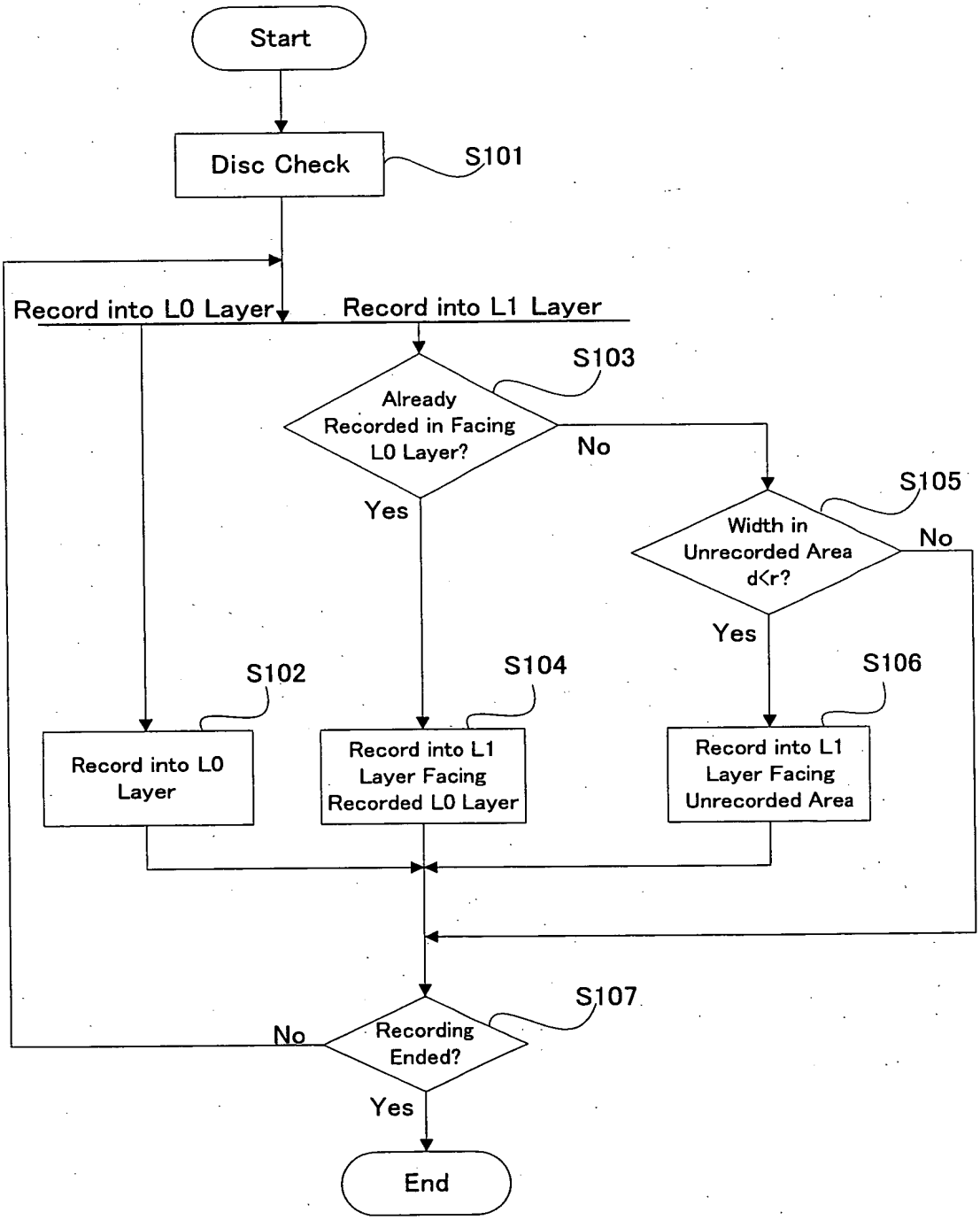

112: Lead-In Area
or
118: Lead-Out Area
108(118): Lead-Out Area
or
109(119): Middle Area
L1 Layer
(2nd Recording Layer)
L0 Layer
(1st Recording Layer)
115: Data Recording Area
102: Lead-In Area
105: Data Recording Area
L1 Layer
L0 Layer
100
101
LB
110:
Transparent
Substrate

(b)

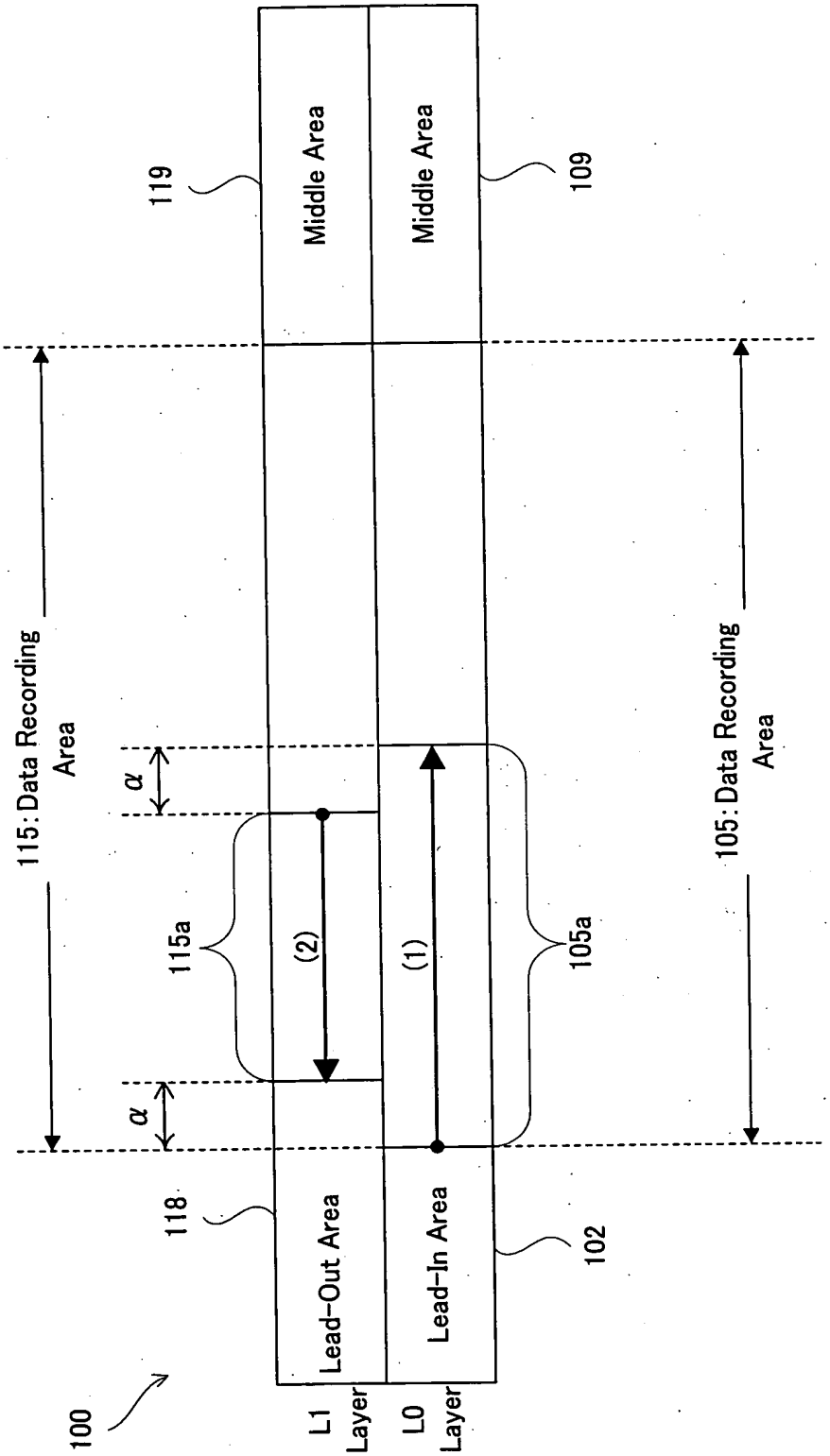
[FIG. 2]


300
354
100
CPU
(Drive Control
Device)
352
Spindle
Motor
Optical
Pickup
351
Memory
355
LD
Driver
358
357
Signal
Recording/
Reproducing
Device
353
Data Input/
Output Control
Device
356
Data

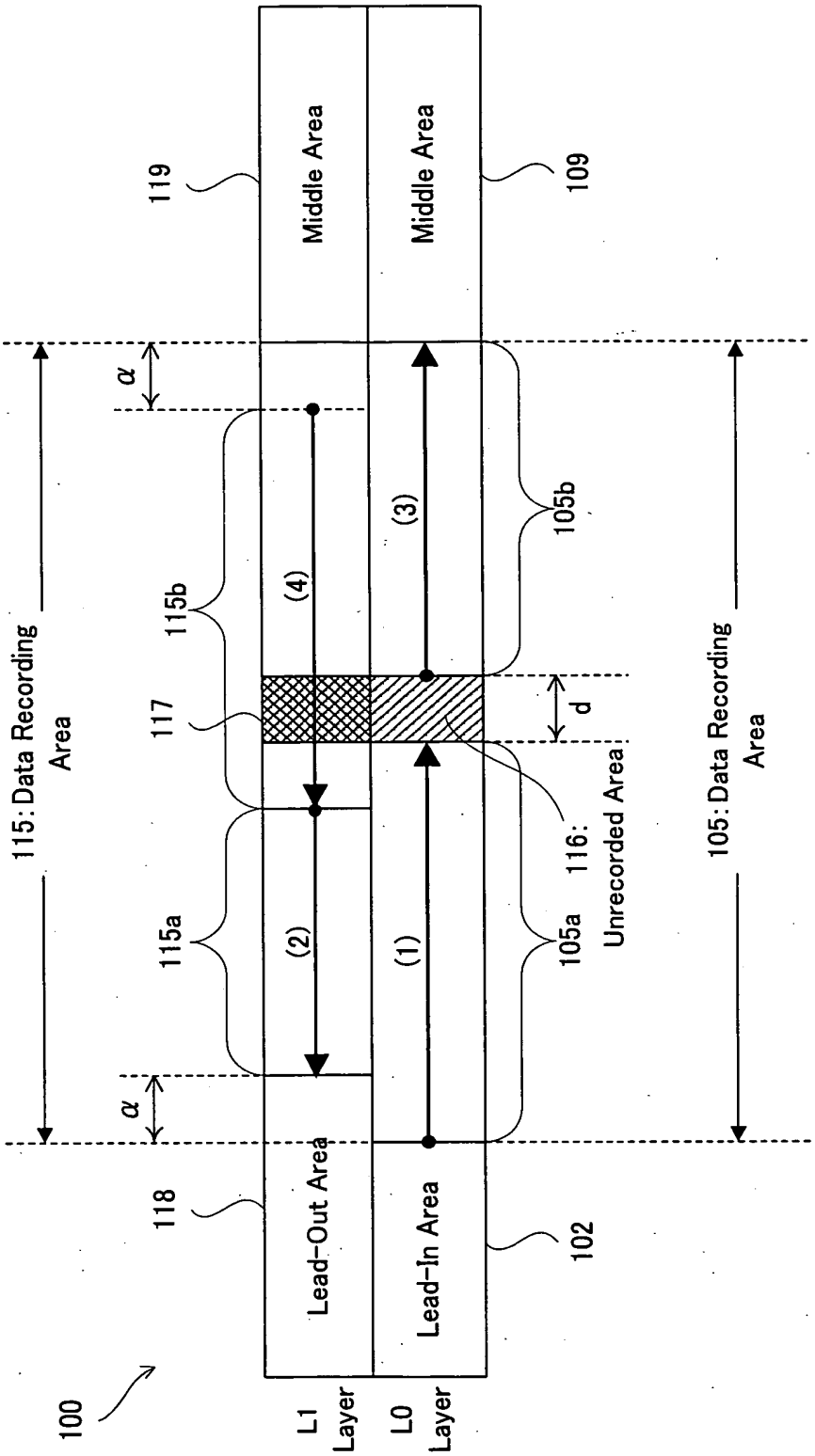
[FIG. 3]


Start
Disc Check
S101
Record into L0 Layer
Record into L1 Layer
S103
Already Recorded in Facing L0 Layer?
No
Yes
S105
Width in Unrecorded Area d<r?
No
Yes
S102
S104
S106
Record into L0 Layer
Record into L1 Layer Facing Recorded L0 Layer
Record into L1 Layer Facing Unrecorded Area
S107
Recording Ended?
No
Yes
End

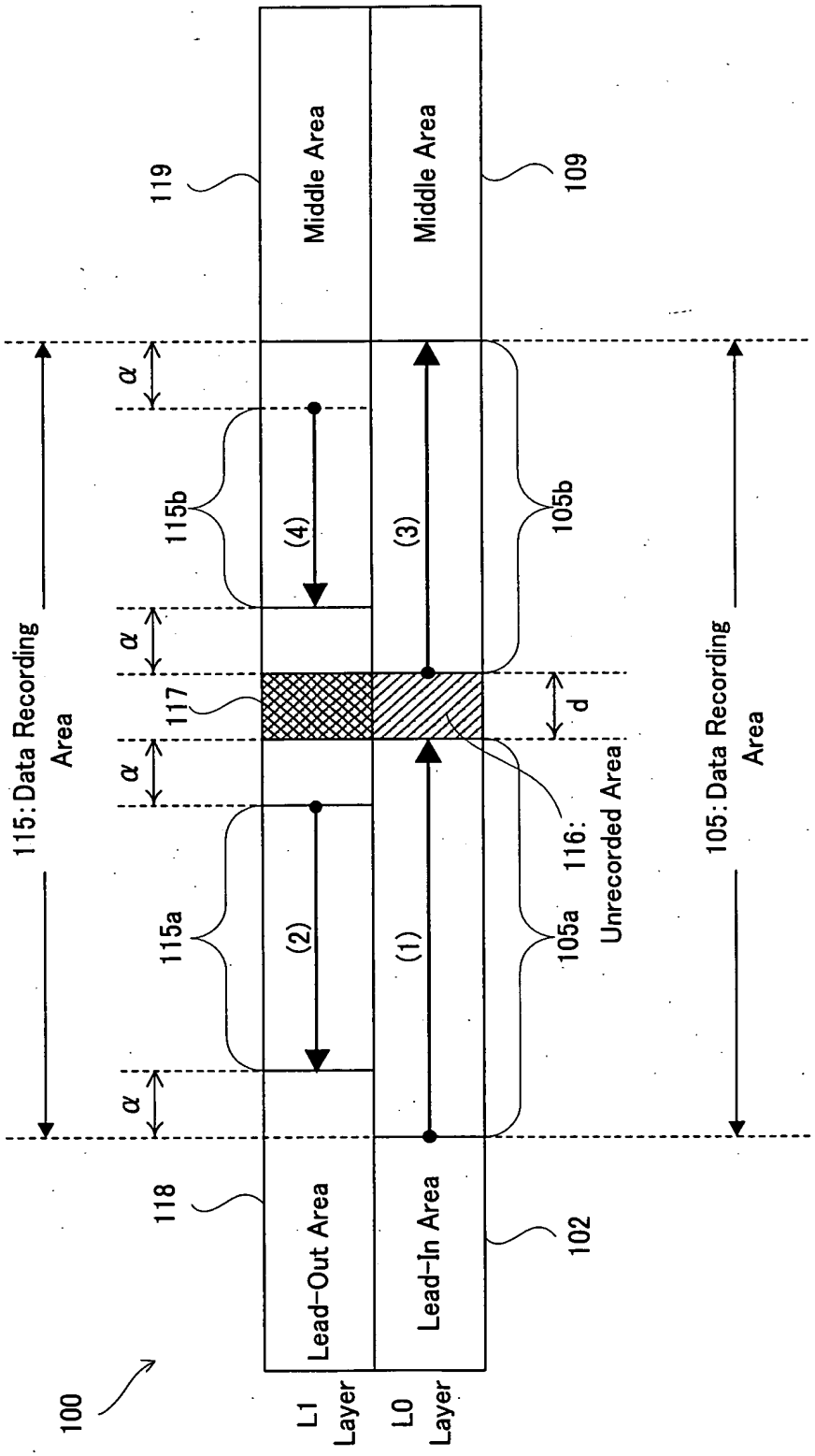
[FIG. 4]


119
Middle Area
109
Middle Area
115: Data Recording Area
105: Data Recording Area
α
115a
(2)
(1)
105a
α
118
Lead-Out Area
Lead-In Area
102
100
L1 Layer
L0 Layer

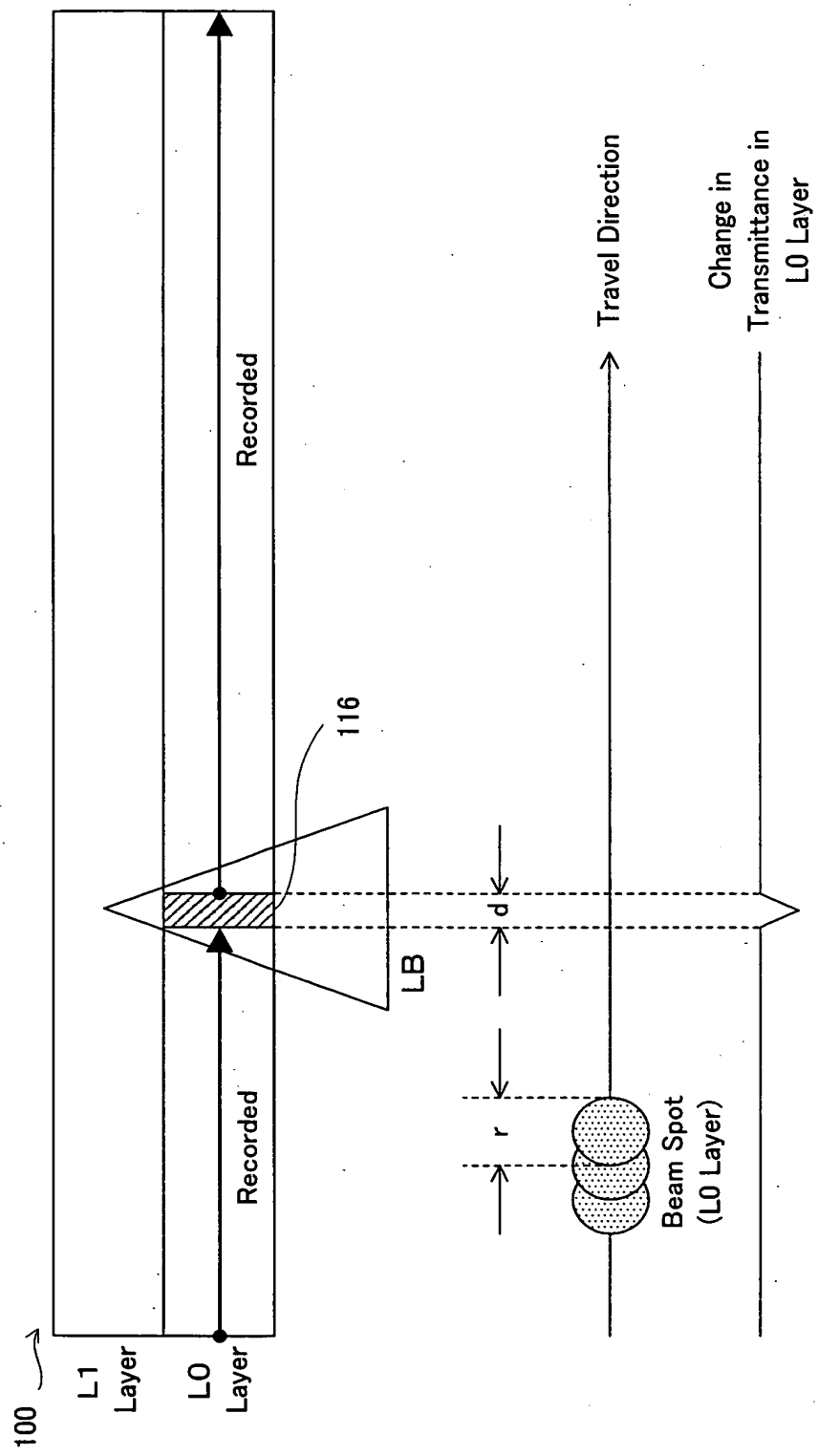
[FIG. 5]


Middle Area
Middle Area
119
109
α
(3)
105b
(4)
115b
117
d
115: Data Recording Area
105: Data Recording Area
116: Unrecorded Area
115a
(2)
(1)
105a
α
118
Lead-Out Area
Lead-In Area
102
100
L1 Layer
L0 Layer

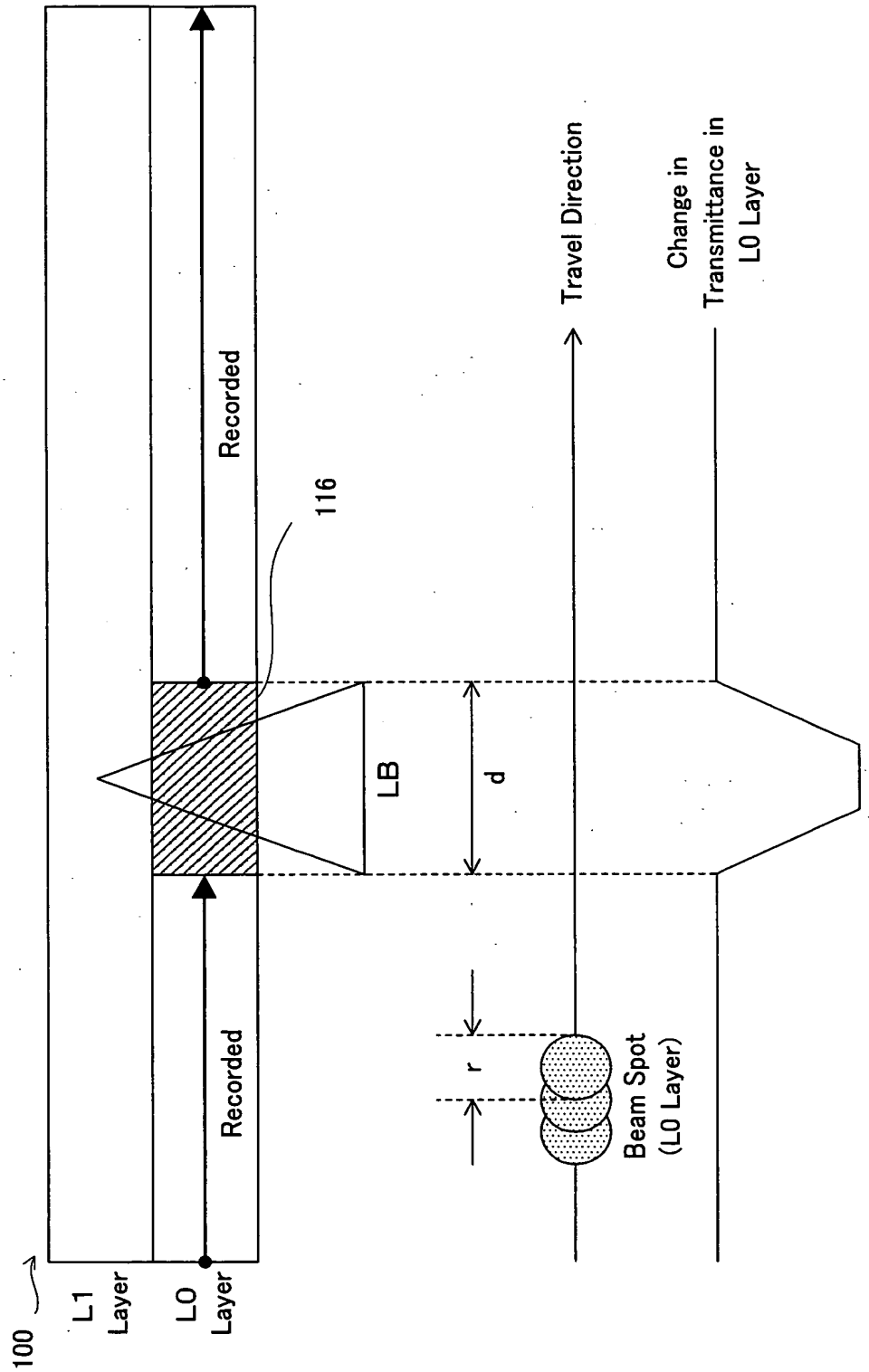
[FIG. 6]


119
Middle Area
109
Middle Area
α
115b
(4)
(3)
105b
α
117
d
α
115: Data Recording Area
115a
(2)
(1)
105a
116: Unrecorded Area
105: Data Recording Area
α
118
Lead-Out Area
Lead-In Area
102
100
L1 Layer
L0 Layer

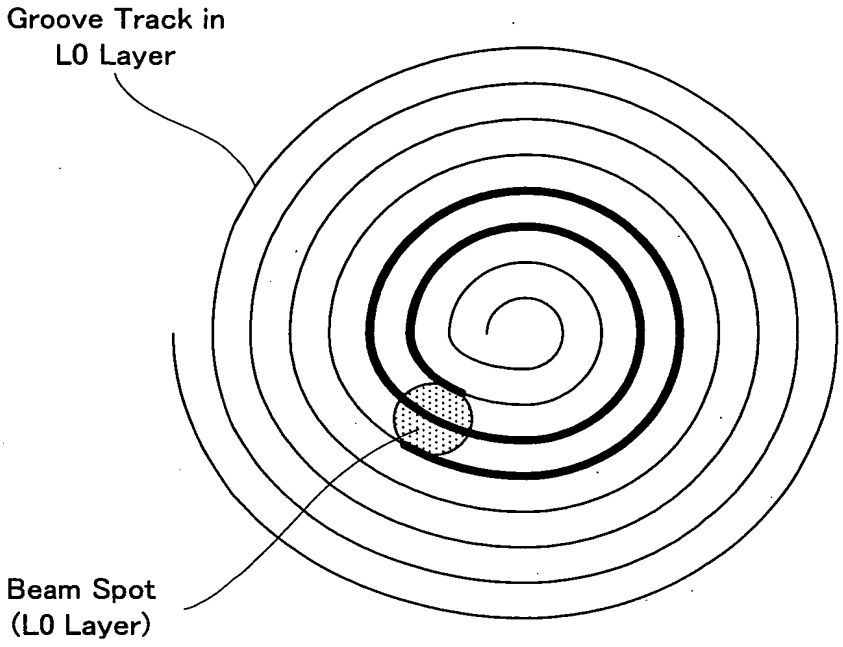
[FIG. 7]


Recorded
116
LB
d
r
Recorded
Travel Direction
Change in Transmittance in L0 Layer
Beam Spot (L0 Layer)
100
L1 Layer
L0 Layer

[FIG. 8]


Recorded
116
LB
d
Travel Direction
Change in Transmittance in L0 Layer
r
Beam Spot (L0 Layer)
Recorded
100
L1 Layer
L0 Layer

[FIG. 9]



[FIG. 10]

120a: Size Information

Data Size
1. 5MB

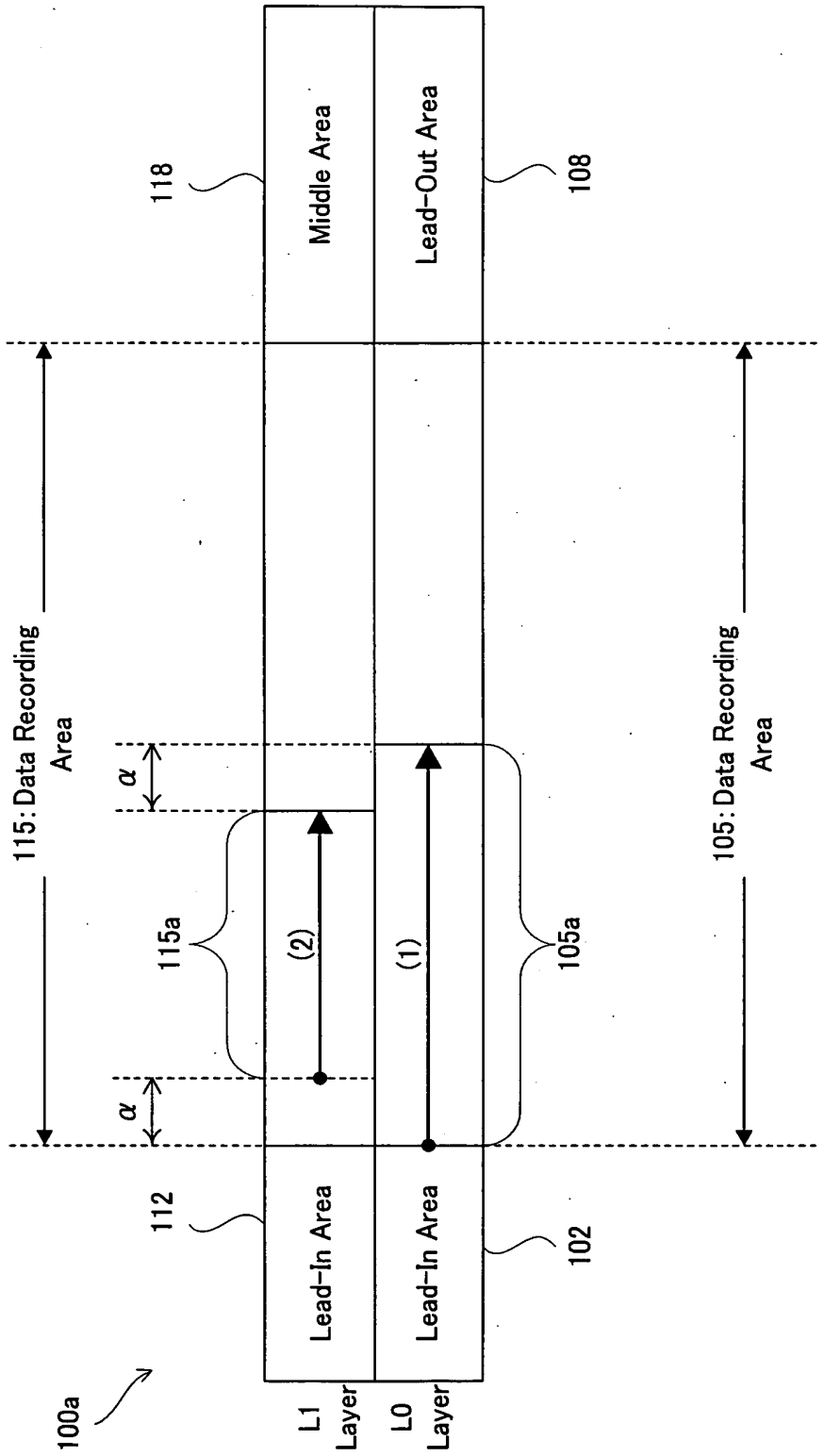
(a)

120b: Size Information

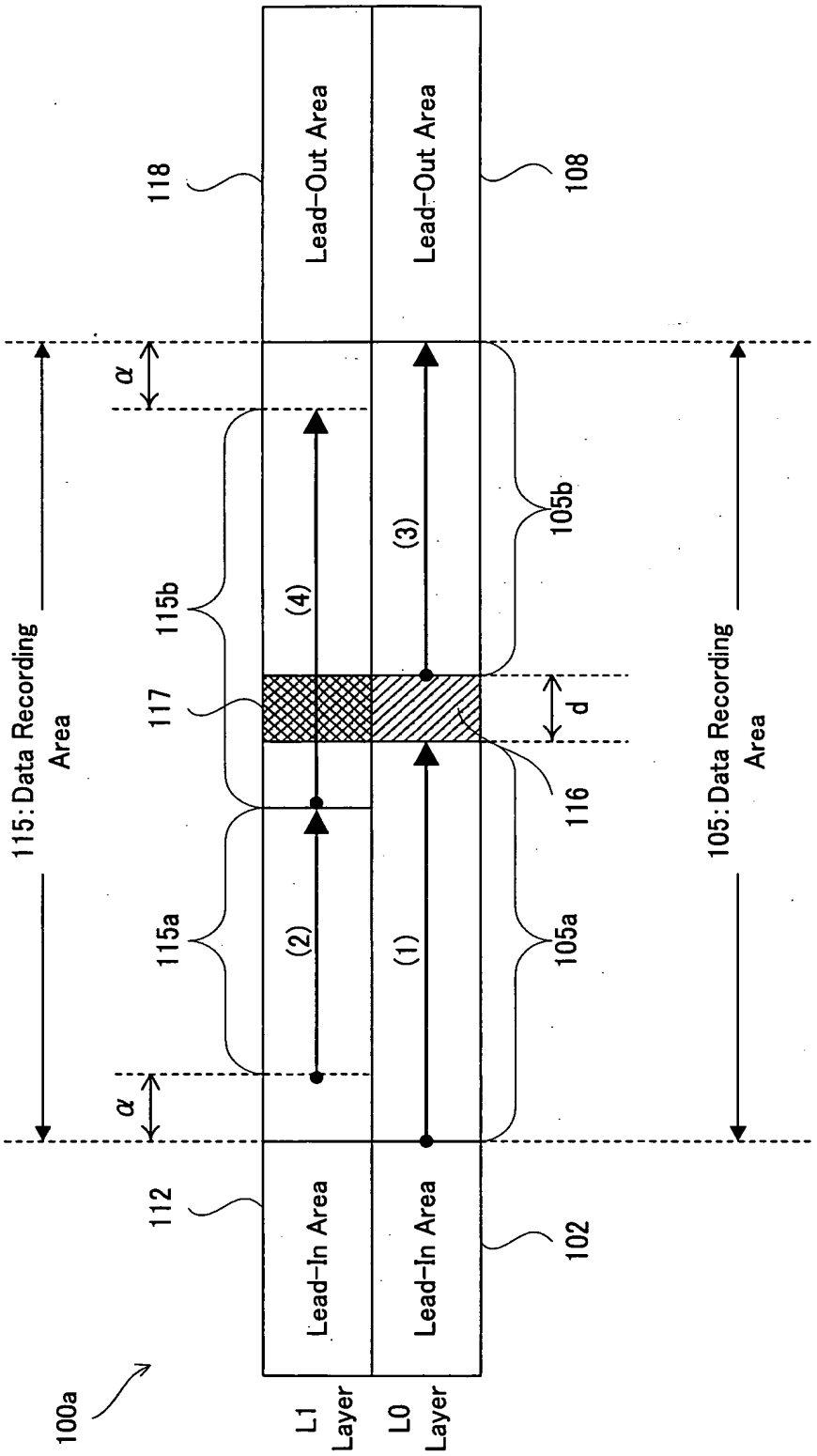
Recording Position	Data Size
Inner (add:N1-N2)	1. 5MB
Intermediate (add:N2-N3)	3. 0MB
Outer (add:N3-N4)	4. 5MB

(b)

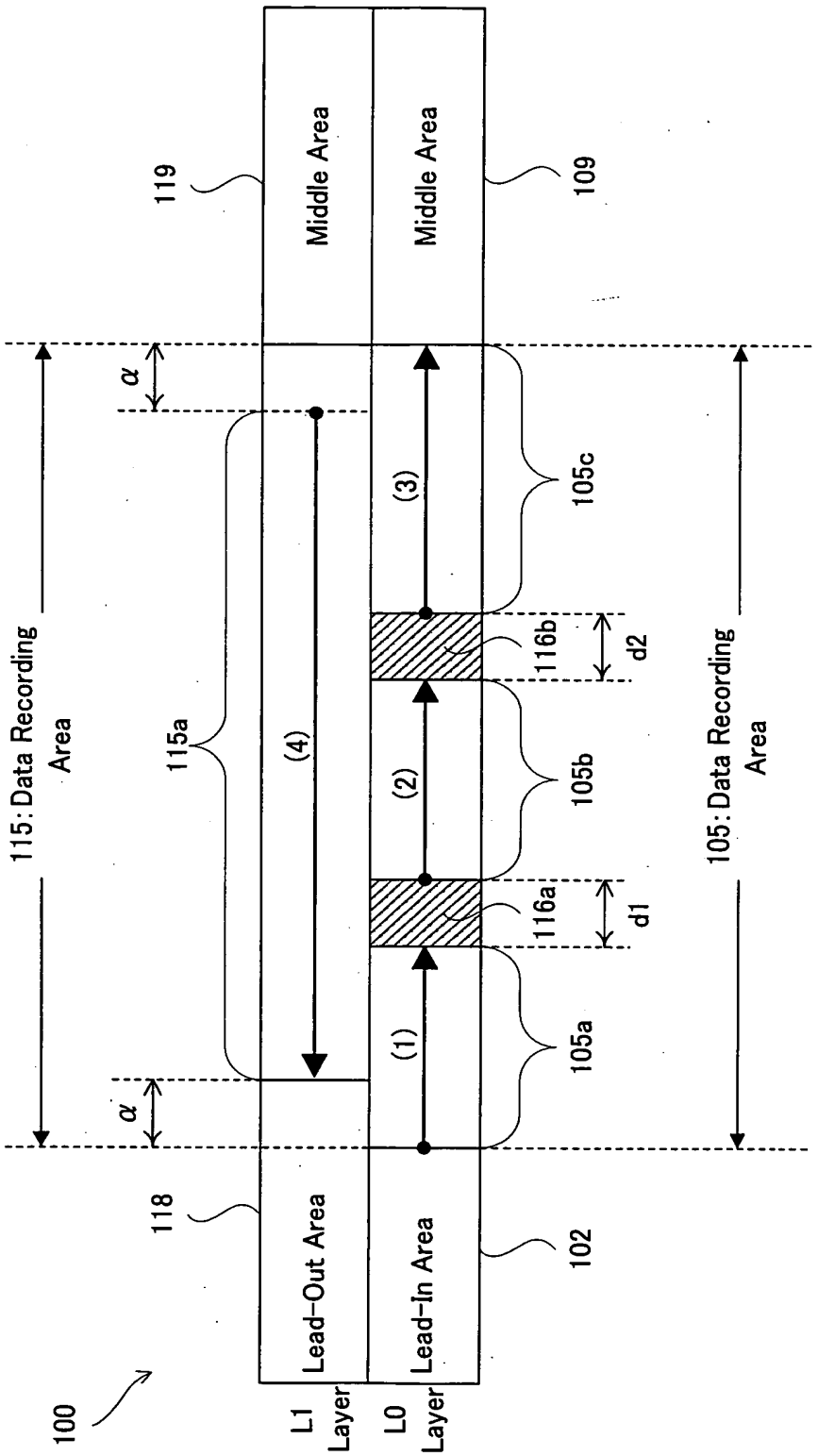
[FIG. 11]


118
Middle Area
Lead-Out Area
108
115: Data Recording Area
105: Data Recording Area
α
115a
(2)
(1)
105a
α
112
Lead-In Area
Lead-In Area
102
100a
L1 Layer
L0 Layer

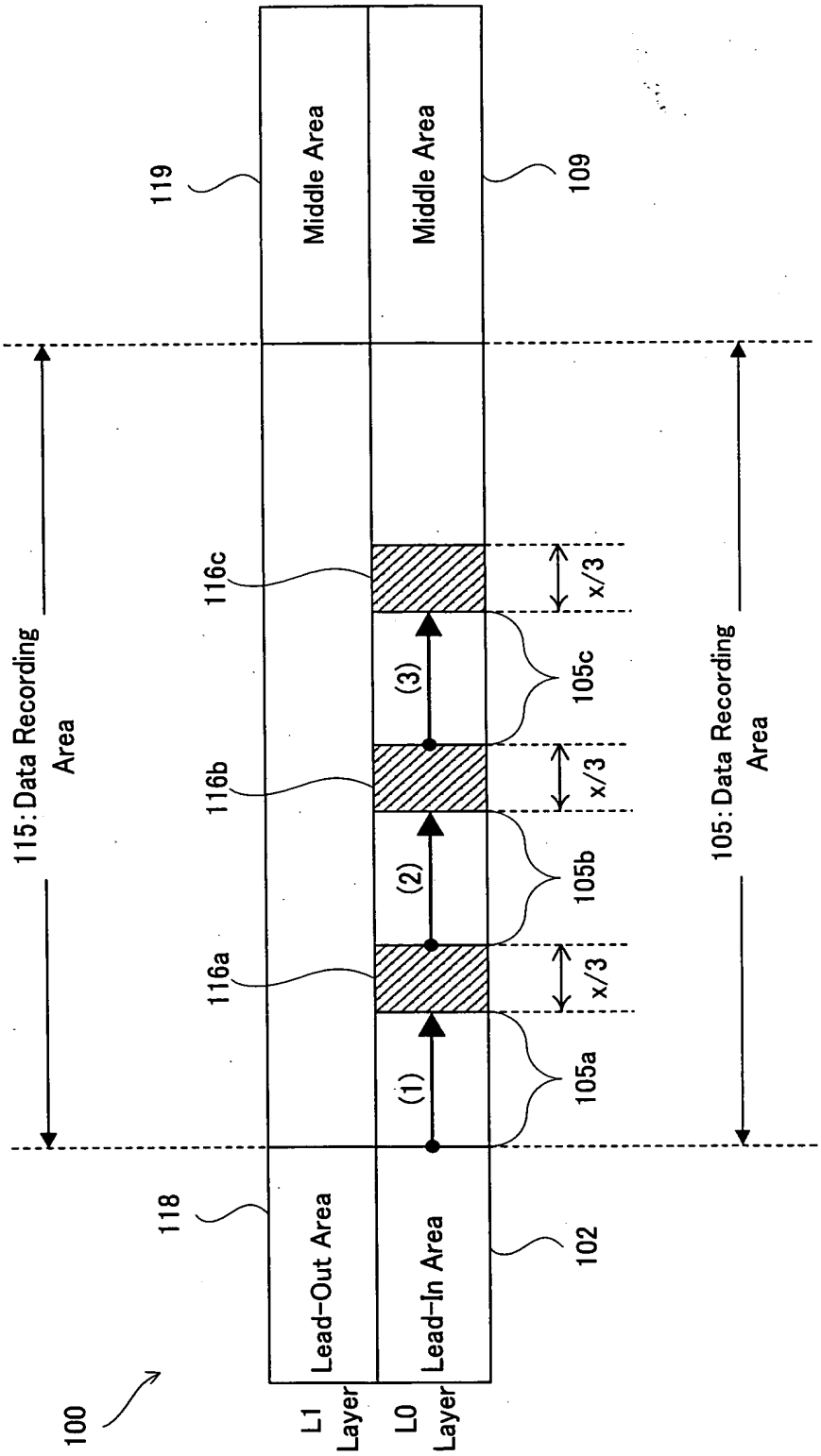
[FIG. 12]


Lead-Out Area
Lead-Out Area
118
108
α
115b
117
(4)
(3)
105b
d
116
115: Data Recording Area
105: Data Recording Area
115a
(2)
(1)
105a
α
112
Lead-In Area
Lead-In Area
102
100a
L1 Layer
L0 Layer

[FIG. 13]


119
Middle Area
109
Middle Area
α
(3)
105c
116b
d2
115: Data Recording Area
115a
(4)
(2)
105b
105: Data Recording Area
116a
d1
(1)
105a
α
118
Lead-Out Area
102
Lead-In Area
100
L1 Layer
L0 Layer

[FIG. 14]


119
Middle Area
109
Middle Area
115: Data Recording Area
105: Data Recording Area
116c
116b
116a
x/3
x/3
x/3
(3)
(2)
(1)
105c
105b
105a
118
Lead-Out Area
102
Lead-In Area
100
L1 Layer
L0 Layer